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# Fiscal Federalism Dimensions of Tax Reform in Developing Countries

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This paper presents economic principles and practical guidelines for the assignment of revenue raising responsibilities among different levels of government for countries with more than one level of government. It also outlines tax harmonization and coordination strategies to avoid inefficiencies and inequities arising from decentralization of revenue raising authority.



## Summary findings

Boadway, Roberts, and Shah propose four economic principles for use in deciding taxing responsibilities for various levels of government. These are:

- *Efficiency of the internal common market.* For efficiency in internal common market, taxes on mobile factors and tradable goods should either be assigned to the national government or coordinated among subnational governments.
- *National equity.* Progressive redistributive taxes ought to be assigned to the level of government having responsibility for redistribution, usually the national government. Subnational governments could levy supplementary flat rates on the federal tax base.
- *Administrative costs.* To minimize collection, administration, and compliance costs, a tax should be assigned to the level likely to be best informed about its base. This suggests assigning real property taxation to local governments and corporate income taxation to the national government.
- *Fiscal need.* To ensure accountability, revenue means should be matched as closely as possible to revenue needs. Thus tax instruments intended to further specific policy objectives should be assigned to the level of government having the responsibility for such a service.

Thus progressive redistributive taxes, stabilization instruments, and resource rent taxes would be suitable for assignment to national government; while tolls on intermunicipal roads are suitably assigned to state governments. Some resource taxes, such as royalties and fees and severance taxes on production and/or output, are designed to cover costs of local service provision and could be assigned to subnational governments. In addition, subnational governments could also impose taxes to discourage local environmental degradation. In countries with a federal level VAT, it may be too cumbersome to have subnational sales taxes. In such circumstances, the fiscal need criterion would suggest allowing subnational governments access to taxes which are traditionally regarded as suitable for national administration, such as personal income taxes.

The authors also stress the importance of tax harmonization and coordination in preserving internal common market, reducing collection and compliance costs and helping to achieve national equity objectives and suggest methods of achieving such coordination vertically (between the federal and subnational governments) and horizontally (among subnational governments).

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This paper—a product of the Public Economics Division, Policy Research Department—is part of a larger effort in the department to reform fiscal systems in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Carlina Jones, room N10-063, extension 37699 (29 pages). November 1994.

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**by**

**Robin Boadway, Sandra Roberts and Anwar Shah\***

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Robin Boadway, Sandra Roberts and Anwar Shah\*

## I. INTRODUCTION

Many countries, especially in the industrialized world, can be considered to be federations in a practical sense that significant fiscal functions are undertaken by lower level jurisdictions, both on the expenditure and on the tax side. Federal economies have developed elaborate forms of fiscal arrangements between the central (federal) and lower (state and municipal) levels of government which jointly determine the way in which tax bases are allocated and shared among the various levels of government as well as the transferring of funds from one level to another. The existence of multiple levels of taxing authority gives rise to issues of tax design not found in unitary states.

As the public sectors of developing countries evolve to provide more and more of the sorts of public services found in industrialized countries, the benefits of decentralized decision making are likely to become more apparent. The reform of tax systems required to streamline the raising of revenues will need to take account of the revenue needs of lower levels of government. This will naturally put constraints on the types of tax reforms which are both feasible and desirable. It is the purpose of this paper to review the special issues that arise in reforming taxes in federal states. The conceptual guidance presented here should, however, be more generally applicable in a multi-jurisdictional setting regardless of the constitutional structure of the country.

In doing so, we draw heavily on the experiences in industrialized countries where federal fiscal arrangements have evolved over a long period of time. Practices in these countries, though highly developed, are far from uniform. They differ because of different institutional, political and geographical circumstances of the country. Nonetheless, there are a number of economic principles of taxation in a federal setting that have been developed in the literature and that can be applied to any federal economy. Their implications for any given country will depend upon the features of the economy, such as the extent of decentralization of functions, the degree of heterogeneity of the population, and the extent of government intervention in the economy. Our review will concentrate on these principles.

We begin with a brief review of the economics of fiscal federalism as it relates to the fiscal arrangements, that is, to the combination of the system of transfers

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\* This paper was prepared for the project on Fiscal Reform and Structural Change sponsored by the International Development Research Centre, Ottawa, Canada.

and the system of tax sharing and harmonization in a federation. Next, we discuss the issue of tax assignment: which taxes ought to be made available to which levels of government? The decentralization of revenue raising inevitably gives rise to problems of inefficiencies and inequities in the internal economic union. Ways of avoiding these through tax harmonization and coordination are next discussed. Finally, we outline some of the implications for tax reform, especially in developing countries.

## II. REVIEW OF THE PRINCIPLES OF FISCAL FEDERALISM

There is a large literature on fiscal federalism. Our purpose here is simply to summarize the basic lessons to be derived from that literature.<sup>1</sup> Federal structures of government allow for the decentralization of the provision of public services to lower levels of government. It is argued that, as in the private sector, decentralized decision making generates more efficient allocations of resources. It does so by enabling governments to provide a mix of services most suited to the needs and tastes of local consumers, by making governments more accountable to their citizens by devolving decisions to governments which are closer to them, and by instilling greater responsiveness by competition among governments.

A reasonable working principle is to decentralize all functions except those for which it can be demonstrated that central provision is needed because of economies of scale, because the benefits of a particular type of service are highly public in nature, or because uniformity of provision is an important objective, for example to maintain the efficiency of the internal economic union or to achieve national equity objectives.<sup>2</sup> This principle leads to the following suggested division of powers among levels of government:

### *i. Public Goods and Services*

Public goods and services which are national in nature should be assigned to the federal government. These include such things as national defense, control of the money supply, international trade and relations, criminal law, national environmental issues. Public goods whose benefits mainly accrue regionally or locally should be assigned to lower levels of government. Examples include roads and waterways, water supplies, regional environmental issues, land and resource use, garbage and recreation. Goods and services which are public in the economic sense make up only a small proportion of government spending; private-type goods and services

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<sup>1</sup> Classic sources include Musgrave (1959), Oates (1972) and Breton and Scott (1978). For more recent general surveys, see Wildasin (1986) and Boadway (1992). The principles applied to developing countries may be found in Boadway, Roberts and Shah (1994).

<sup>2</sup> This is an economic principle. There may well be important political constraints that prevent the decentralization of economic power, such as the danger of destabilizing the country. In this paper, our main concern will be with economic criteria.

and transfers are much more important.

## ii. *Quasi-Private Goods and Services*

Most goods and services expenditures by government are on quasi-private goods and services, which are private services provided through the public sector typically free of charge. They include large items such as education, health services, and welfare service. In terms of efficiency of provision, they are most suited for delivery by lower levels of government, since given expenditures benefit individuals closest to where the expenditures are performed. Nonetheless, the federal government may have an interest in the way in which these types of services are being provided. They typically are instituted for redistributive purposes and the federal government may have a legitimate interest in ensuring that national equity objectives are being satisfied. As well, differential provision of quasi-private goods and services may distort the allocation of labor across states. We return below to the means by which the federal government may exercise its responsibilities for national efficiency and equity while at the same time allowing these services to be decentralized to the states.

## iii. *Transfers*

Transfers to individuals and businesses also comprise a large budget item. Transfers to individuals serve essentially redistributive purposes, either as a part of the income-based tax-transfer system, or as part of the system of social insurance, including unemployment insurance, welfare and pensions. To the extent that the federal government has responsibility for redistributive equity, these are necessary policy instruments. States may nonetheless have some interest in redistribution based on local preferences and may wish to supplement federal transfer schemes with those of their own. Transfers to business are more clearly a federal responsibility. At the state level, they are likely to give rise to distortions in the allocation of capital and to beggar-thy-neighbor policies.

## iv. *Regulation*

As well as spending money, governments regulate activities of the private sector, even though economists might prefer that they limit themselves in this area. Regulation of capital markets should clearly be a federal responsibility because of the mobility of capital and the possibility of interfering with the efficiency of the internal economic union. Regulation of goods which are freely traded across internal borders, such as transportation, communications and agriculture, should also be central. Labor market regulation is less clear-cut. Some forms should be clearly federal, such as immigration policies. Others, though they may fulfill local needs, can clearly interfere with national labor market efficiency, such as professional licensing. On the other hand, some forms of labor market regulation such as standards in the work place or labor training need to be decentralized to conform with local customs or to be coordinated with education or other policies.

The exact application of these principles depends upon the features of the particular country. The benefits of decentralization will be greater the less homoge-

neous is the population across regions and the more geographical dispersion there is. There is obviously a great deal of judgment involved in their application. One important factor in determining the limits to decentralization is the extent to which government in general, and the federal government in particular, is relied upon for redistributive objectives. In industrialized countries, much of what governments do is redistributive in nature. Generally speaking, those who place greater weight on the redistributive role of government tend to support a larger role for the federal government in general, and more responsibility for redistribution being assigned to the federal government. Those who would prefer less government interference in the economy, and less redistribution, tend to favor greater decentralization (since competition by lower levels of government is thought to reduce the both the size of the public sector and its ability to redistribute).

The decentralization of expenditure responsibilities naturally brings with it the need to decentralize revenue-raising responsibilities. Otherwise, the lower levels of government would be dependent upon funding from the central government, and the full benefits of decentralized decision making and political accountability would not be achieved. It is the purpose of the following sections of this paper to discuss the best ways to decentralize taxing responsibilities. However, the extent of decentralization of revenue-raising need not correspond exactly with that of expenditure responsibilities. Indeed, in virtually all multi-government economies, lower levels of government finance some of their expenditure responsibilities by transfers from the higher level. There are two reasons for this. The first is simply that the case for decentralizing expenditure responsibilities is stronger than that for decentralizing revenue raising. While decentralizing expenditures leads to more efficient service delivery, it is not clear that there are equivalent efficiency advantages (apart from fiscal accountability) of decentralizing revenue raising. On the contrary, decentralization of taxation can lead to significant inequities and inefficiencies in the federal economy. Thus, there are economic advantages from having more taxes collected at the higher level of government than is necessary for its own expenditures, and transferring some of them to the states, that is, for there being a *fiscal gap*.

The second is that the transfer of funds from the higher to the lower level of government can itself achieve important objectives in a federal state. In particular, appropriately designed transfers can be used to ameliorate the inefficiencies and inequities that accompany fiscal decentralization while still preserving its benefits. The form that these inefficiencies and inequities take has a bearing on the form of the transfers. We can identify four main objectives for federal-state grants:<sup>3</sup>

#### i. *Fiscal Efficiency*

The decentralization of expenditure and tax responsibilities inevitably leaves different jurisdictions with different fiscal capacities in the sense that they can only provide given public services at very different tax rates to their citizens. In other words, depending on the state of residence, the *Net Fiscal Benefits* (NFBs) for a

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<sup>3</sup> Though these are stated in terms of federal-state grants, similar arguments apply for the case of state-municipal grants.



given type of citizen will differ. In general, the existence of differential NFBs provides an incentive for resources (especially labor) to be allocated inefficiently.<sup>4</sup> The quantitative importance of fiscal inefficiency depends upon the degree of mobility of labor across states as well as the difference in state tax capacities. Fiscal inefficiency can be largely alleviated by a set of equalizing transfers to states to equalize their tax capacities. The grants should be unconditional and unrelated to actual tax rates or tax effort within a state.<sup>5</sup>

## ii. *Fiscal Equity*

NFB differences also give rise to horizontal inequities in the federation, as originally pointed out by Buchanan (1950). That is, otherwise identical persons will be treated differently by the public sector depending on the state in which they reside. The same sort of equalizing unconditional transfers which can deal with fiscal inefficiency are also appropriate for addressing these fiscal inequities. This is one of the rare cases in economics in which efficiency and equity concerns coincide.

## iii. *Efficiency of the Internal Economic Union*

The exercise of fiscal responsibilities by the states is also likely to give rise to distortions in the free flow of goods, services, labor and capital across the states. This can occur both on the tax side and on the expenditure side. In the case of the former, the appropriate action is to institute some form of tax harmonization among the states or between the states and the federal government; we deal with that in a later section. However, expenditure policies can also interfere with the efficiency of the internal economic union. Differences in program design across states can induce labor misallocation. For example, states may impose residency requirements or restrict portability. As well, the terms of the programs may be designed to attract desirable residents (e.g., skilled or wealthy persons) and to drive away less desirable ones (low-income and low skilled persons). The federal government may wish to impose guidelines on states to prevent their programs from distorting the internal common market. One way to do so is by the use of conditional grants which provide financial incentives for provinces to design their programs according to criteria set out by the federal government. This is referred to as the use of the *spending power*. Ideally, the criteria should be general ones, no more restrictive than necessary to induce provinces to cooperate. In particular, the provinces should maintain legislative control over programs in their areas of responsibility and should not be deterred from exercising that authority in innovative and effective ways. Generally speaking, the conditional grants needed to foster the internal economic union need not be matching ones. They could be bloc grants disbursed according to simple aggregate formulas (e.g. equal per capita or needs-based), but with penalty provisions attached for non-conformity with national standards.

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<sup>4</sup> The exact circumstances in which this will be the case are discussed in Boadway and Flatters (1982); see also Wildasin (1986).

<sup>5</sup> See Shah (1991, 1994) for a detailed discussion of the appropriate formulas.

#### *iv. National Equity Objectives*

Finally, the federal interest in fostering national standards of redistributive (vertical) equity may also lead to a role for the spending power. Much of actual redistribution takes place on the expenditure side of government budgets and is delivered through quasi-private goods. To the extent that these are the responsibility of the states, the only way for the federal government to achieve its national equity objectives is through the spending power. As with item iii., the federal government can provide bloc grants to the states with conditions attached stipulating general standards to which programs should conform. These could include such things as accessibility, coverage of the program and portability.

The system of intergovernmental transfers makes up part of the fiscal relations between different levels of government made necessary by the decentralization of responsibilities to the states. The other main part consists of harmonization and sharing arrangements on the tax side. These are also important to ensure the efficiency of the internal economic union, to foster national equity objectives and to maintain the administrative efficiency of the tax collection system, while at the same time giving the states the required responsibility for financing their own expenditures, at least at and near the margin. The combination of the system of transfers and the system of tax sharing and harmonization comprise what is referred to as the fiscal arrangements of the federation. It is the fiscal arrangements taken as a whole that enable the federation to achieve the fullest benefits of decentralized fiscal responsibility while at the same time preserving the efficiency and equity of the national economy. Decentralization and the fiscal arrangements go hand in hand: the more decentralized is the federation, the more important is the system of fiscal arrangements; and, the more effective the fiscal arrangements, the more confidence one can have in advocating the decentralization of decision making. Though we concentrate on the tax side of the fiscal arrangements in this paper, the design and effect of various tax harmonization measures is not independent of the transfer system.

Finally, though we are ultimately concerned with tax reform in developing countries, much of the experience we draw on is in industrialized economies with longer histories of federal decision making. There are some very fundamental differences in the roles assumed by governments in the two sorts of economies which will set limits on how far tax reforms in a federal system can be taken. By and large, governments in industrialized countries have more advanced social programs and redistributive schemes, have tax mixes which rely more on direct taxes and general taxes, and are more decentralized than those in developing countries. This will have an influence on how far the principles of this paper are to be applied.

### **III. TAX ASSIGNMENT**

Governments rely on a wide variety of tax instruments for their revenue needs, including direct and indirect taxes, general and specific taxes, business and individual taxes, etc. The question we address here is which types of taxes are most suitable

for use by lower levels of government. We begin with a statement of general principles and then consider how these principles might apply to each of the common types of taxes typically levied.

## **1. Principles of Tax Assignment**

The assignment of taxes by jurisdiction depends partly on the mix of various taxes used in the country overall. In public finance theory, the issue of the ideal tax mix even in a unitary state has not been widely developed. Governments almost universally employ balanced tax systems which have the feature that different taxes apply to basically the same bases. For example, general sales taxes, payroll taxes and income taxes have bases which overlap considerably. From the point of view of standard efficiency and equity, one should be able to make do with a single general tax base, yet no governments behave that way. The usual reason given for this is that administrative considerations play an important role. A mix of taxes keeps the rate on any one tax low, thereby reducing the incentive to evade or avoid the tax. Furthermore, by using a mix of taxes, taxpayers who would otherwise be able to avoid taxation of one type are caught in the net of another, making the tax system fairer. The importance of the various taxes in the overall mix remains, however, a matter of judgment rather than something that can be deduced from the principles.

These same general considerations apply in the case of assigning taxes in a federal government system. Efficiency and equity arguments have to be tempered by administrative considerations, and the exact assignment depends upon informed judgment. We can, however, outline the economic principles that come into play in deciding which taxes to assign to lower levels of government. They are as follows:

### *i. Efficiency of the Internal Common Market*

The internal common market will be functioning efficiently if all resources (labor, capital, goods and services) are free to move from one region to another without impediments or distortions imposed by policy. Decentralized tax systems can interfere with the efficiency of the economic union in two ways. For one, the uncoordinated setting of taxes is likely to lead to distortions in markets for resources which are mobile across states, especially capital and tradeable goods. This problem will be lessened considerably if state governments recognize that resources are mobile. However, if they do recognize that, they may engage in socially wasteful beggar-thy-neighbor policies to attract resources to their own states. If all jurisdictions engage in such policies, the end result will simply be inefficiently low taxes (or high subsidies) on mobile factors.

### *ii. National Equity*

The tax-transfer system is one of the main instruments for achieving redistributive equity. The argument for making equity a federal objective is simply that all persons ought to enter into society's 'social welfare function' on an equal basis, and presumably the federal government is the only level that can ensure that residents in different regions are treated equitably. This may be tempered if states have different tastes for redistribution, or if centralized decision making is not guided by

normative criteria. To the extent that equity is viewed as being a federal policy objective, decentralized taxes can interfere with the achievement of those objectives. As with the efficiency case, uncoordinated state tax policies may unwittingly induce arbitrary differences in redistributive consequences for residents of different states. Also, given the mobility of labor and capital across states, the states may engage in perverse redistributive policies using both taxes and transfers to attract high-income persons and repel low-income ones. Beggar-thy-neighbor redistributive policies are likely to be offsetting with respect to resource allocation, but will result in less redistribution than in their absence. (Of course, those who abhor redistribution through the government will prefer decentralized redistributive policies for precisely the same reason.) This is obviously likely to be more of a problem for those taxes which are redistributive in nature, as well as for transfers.

### *iii. Administrative Costs*

The decentralization of revenue raising can also serve to increase the costs of collection and compliance, both for the public sector and for the private sector. There are fixed costs associated with collecting any tax which will have to be borne for each tax type that is used by the states. Taxpayers will also have to incur costs of compliance for all taxes levied. The possibilities for evasion and avoidance will increase with decentralization for some types of taxes. This will be true where the tax base is mobile, or where the tax base straddles more than one jurisdiction. In the latter case, there will need to be rules for allocating tax revenues among jurisdictions; in their absence, some tax bases may face either double taxation or no taxation at all. Auditing procedures may also be distorted for those tax bases which involve transactions across state boundaries.

### *iv. Fiscal Need*

To ensure accountability, revenue means should be matched as closely as possible to revenue needs. Thus tax instruments intended to further specific policy objectives should be assigned to the level of government having the responsibility for such a service. Thus progressive redistributive taxes, stabilization instruments and resource rent taxes would be suitable for assignment to the national government; while tolls on intermunicipal roads are suitably assigned to state governments. In countries with a federal level VAT, it may be too cumbersome to have sub-national sales taxes. In such circumstances, the fiscal need criterion would suggest allowing subnational governments access to taxes which are traditionally regarded as more suitable for national administration, such as personal income taxes.

## **2. Assignment by Type of Tax**

The relevance of each of the above principles varies from tax base to tax base. It will also depend upon how much responsibility for revenue-raising has been devolved to the states. In this section, we consider how the principles apply to each of the main types of taxes. Where relevant, we note particular issues and practices in developing countries. Of course, there may be institutional impediments to the ability to assign taxes freely according to economic principles. In particular, national

constitutions may restrict the ability of either the federal government or the states from assuming responsibility for certain types of taxes. That will obviously depend upon the country in question. It may also be the case that the federal government can override state policies in certain countries, where the overriding is justified by national objectives, such as the maintenance of an efficient internal economic union. Thus, for example the interstate commerce clause in the U.S. constitution allows the federal government to strike down state laws which interfere with interstate trading.

i. *Personal Income Taxes*

Income taxes applied to individuals (or households) represent an important instrument for redistribution. For redistributive purposes, they should be available to the federal government. Assignment of personal income taxes to the states runs the risk of national equity objectives being violated through different degrees of progressivity across states, and of beggar-thy-neighbor state policies competing away redistribution.

Moreover, since capital income is typically a component of these taxes, there is a possibility of capital markets being distorted. For example, state income tax regimes could give preferential treatment to capital income generated within the state. As well, because capital income can be earned both within the state and outside, compliance and collection costs, and the possibilities for evasion, are likely to increase substantially as responsibility for personal income taxes are decentralized. For all these reasons, it is preferable that responsibility for the personal income tax rest with the federal government.

The same might be said for other direct taxes on persons, such as taxes on personal wealth and on wealth transfers (e.g., estate taxes). Indeed, the case for centralization of these is perhaps even stronger, given that their bases are highly mobile and that they are very effective instruments for pursuing equity. By the same token, subsidies to persons, which are essentially negative direct taxes, might also be federally levied and integrated with the income tax system.

It should be noted that in low-income agrarian societies and lower-middle income countries, the coverage of the personal income tax is quite limited and its role as a redistributive element of the fiscal system is further clouded by widespread tax evasion. Shah and Whalley (1991) have argued that when one considers the rural-urban migration effects associated with a tax on urban incomes, as well as the reverse redistribution effects of the income tax through the bribe system, the personal income tax may not be viewed as a progressive element of the tax structure in lower-middle income countries. Under such circumstances, an exclusive federal role for the personal income tax is difficult to justify. Further, many of the services provided by sub-national governments in developing countries could not be directly related to property and are redistributive in nature. This suggests that while the federal government may impose a progressive income tax structure, sub-national governments should be given access to flat charges on the federal base.

To the extent that states are allowed access to personal income tax revenues, the allocation of tax base across states becomes important to ensure that each person is

taxed only once. In principle, allocation by place of residence rather than place of employment is preferred. However, establishing place of residence may be difficult if persons move during the tax year. Assigning proportions of a tax base to each state according to the share of a tax year spent in the state would be complicated. Countries with decentralized income tax systems usually assign residency to a given state for the entire tax year according to residency on a given date (e.g., the last day in the year).

China has assigned personal income taxation to the provincial-local governments, while retaining for the central government control of the determination of its base. In most other developing countries, the determination of the personal income tax base and rate is a central responsibility, whereas tax administration is occasionally shared with sub-national governments. Exceptions are India, where this tax field is co-occupied by the federal and state governments, and Brazil, where states are allowed a supplementary rate on the federal base. Nigeria is unusual insofar as the federal government collects only a limited share of income taxes. It has access only to taxes paid by the armed forces, external affairs employees, and residents of the Federal Capital Territory. The predominance of state-level income tax collection hinders redistribution. In some cases, state governments control instruments other than the income tax which may affect income redistribution. In Brazil, for example, the taxes on inheritances, gifts, and supplemental capital gains are state levies.

## ii. *Corporation Taxes*

As with the personal income tax, the case for making the corporation income tax a federal responsibility is strong. For one thing, the corporate tax can be viewed partly as an adjunct to the personal tax, or, more precisely, as a withholding device for the personal tax, to tax at source shareholder income which could otherwise be reinvested in the corporation and escape immediate taxation. To this extent, it is better levied at the same level as the personal tax so that it can be integrated easily. In an open economy, the corporate tax also serves as a useful device for obtaining revenues from foreign corporations, especially those that are able to obtain tax credits from their home governments. Again, the federal level seems the most appropriate one for this purpose. More to the point, since the corporate tax base is capital income within a jurisdiction, decentralizing it to the states would jeopardize the efficient functioning of capital markets and give rise to the possibility of wasteful tax competition to attract capital at the expense of other jurisdictions.

Administrative simplicity also favors centralizing the corporate tax. Since many corporations operate in more than one jurisdiction at the same time, tax administration in a multi-jurisdiction setting can be a complicated matter. For any given jurisdiction, the appropriate share of the tax base must be allocated to that jurisdiction, and the taxing authority must have some way of monitoring the firm to ensure compliance. With complete independence of taxing authorities, this would be difficult. The firm may well have an incentive to engage in transfer pricing or financial and book transactions to shift its profits around to reduce its tax burden. The firm itself will have an increased cost of compliance if it faces different

tax regimes in different jurisdictions. In practice, tax bases are typically allocated among sub-national jurisdictions according to methods of formula apportionment which attempt to minimize the administrative and incentive problems associated with determining tax shares. Common methods include allocating tax revenues of a given corporation among jurisdictions according to a mix of shares of the firm's payroll, revenues, and possibly capital stocks.

Thus, the case for centralizing the corporate tax is very strong. The same might be said for other taxes which effectively fall on corporate capital, such as capital taxes. And, by symmetric arguments, subsidies to corporations should be centralized, given the obvious tendency for lower levels of government to use them to attract capital in competition with other jurisdictions in ways which might be distorting.

Of course, not all tax competition need be wasteful; it could also serve to improve the efficiency of lower level governments. Some of the distorting effect of tax competition could be avoided if the taxes involved were designed to be non-discriminatory so that they treated all capital within their jurisdictions alike. This is equivalent to the so-called *principle of national treatment* in international trade policy.

In most developing countries, the determination of the corporate tax base and rate structure is a central government responsibility. However, collection and administration is sometimes decentralized. Administration of the corporate tax is a joint responsibility of national and sub-national governments in Pakistan and the Russian Federation. In China, corporate tax collection is divided among federal, provincial and local governments (although the federal government retains sole authority to set the base and rates). The provincial and local governments are responsible for collecting taxes from provincially-owned and locally-owned enterprises, respectively. The federal government collects taxes on their own enterprises as well as on foreign-owned enterprises and all domestically owned private enterprises. Indeed, this pattern of the federal government setting the base and rate structure combined with some decentralization of collection applies to all major taxes in China, including sales and excise taxes. There are cases in which sub-national governments control instruments which may affect capital mobility. In India, for example, the capital transactions tax is a state instrument.

### iii. *Sales Taxes*

Sales taxes are much better candidates for decentralization to the states, especially if significant revenue sources are required. Typically, general sales taxes are levied on consumption goods defined with varying degrees of inclusiveness, and on a destination basis. As such, they are essentially general taxes on residents of the taxing jurisdiction. Given the relatively low degree of mobility of households, they are likely to be much less distorting than, say, taxes on mobile bases like capital (at least as long as investment goods are not included in the base). As well, since sales taxes are not significant instruments for redistribution, little is lost from an equity point of view from decentralizing them to the states.

There are, however, some distortions and administrative problems likely to

arise from state sales taxes. The main source of inefficiency has to do with cross-border shopping. Residents of high-tax jurisdictions will have an incentive to shop in neighboring low-tax jurisdictions to reduce their tax burdens. Given the absence of border controls, this will be difficult to avoid. As a consequence, tax competition will likely result in rate levels and structures which do not vary greatly across jurisdictions. On the surface of it, this might pose a problem for poorer jurisdictions that might otherwise need higher tax rates to finance their basic services. However, this disadvantage would be mitigated if an effective system of equalizing transfers from the federal government were in place, as discussed in the previous section.

If the state sales taxes take the form of sub-national credit-method value-added taxes (VATs), the taxation of interstate trade creates major difficulties. Such transactions can either be taxed on a destination basis (taxing final consumption) such that imports are taxed and exports are zero rated; or on an origin basis (taxing production) such that both imports and exports are exempted from taxation. Since the use of the destination basis for a VAT requires customs houses at state borders within a federation, and thereby works as an impediment to the free flow of goods and services within the nation, a possible alternative is to adopt the so-called "restricted origin principle", where interstate trade is taxed on the origin principle and international trade on a destination basis. This solution would work well if sub-national units had uniform rates of VATs and if trade flows within and from outside the country were not too uneven across states (see also McLure, 1993). Inefficiencies could result if the taxation basis differed across jurisdictions; for example, state governments might be tempted to use an origin basis for their state taxes rather than a residency one. These problems might be mitigated by joint federal-sub-national administration of the VAT.

Other possible inefficiencies of state sales taxation are related to administrative problems, which are certainly likely to be present in developing countries. One has to do with the fact that the broader the base, the more difficult it is to enforce compliance. To get a fully general consumption base, including both goods and services, it would be practically necessary to collect the tax at the level of final sales to the consumer, the retail stage. This increases the compliance costs considerably since the number of taxpayers would be extremely large. Furthermore, enforcement of the tax becomes very difficult, and evasion is likely to be high. Some of these difficulties can be avoided by levying the tax at an earlier stage, though at the cost of making the base much narrower.

Another problem with state sales taxes is that it is difficult to avoid some cascading of the tax through purchases of taxed inputs. Systems in which taxes paid on purchases from registered dealers are credited towards or exempted from later levies reduce the incidence of this problem at some administrative cost, but do not eliminate it entirely. A related issue is the difficulty in ensuring that sales to buyers outside state boundaries have been purged of taxes on intermediate inputs. These same problems arise at the federal level and are typically addressed by adopting a multi-stage tax such as a value-added tax (VAT). Under a VAT, taxes on business inputs are eliminated by the system of crediting for input purchases, exports are



given full credit for taxes paid, and imports are fully taxed. As noted above, adopting the same remedy at the state level is difficult because of the absence of border controls. Furthermore, since states are inevitably much more open than entire countries, the administrative complexities of operating a system of taxing and crediting on all cross-border transactions would be very high and would likely constitute a significant distortion on inter-state trade. For these reasons, single-stage state sales taxes may well be preferred.<sup>6</sup>

Quite apart from these difficulties of dealing with cross-border transactions by both producers and consumers, state sales taxes entail a separate layer of administrative machinery on the government side, and additional compliance costs for businesses who are required to collect the tax. These costs are especially high in a system in which there are separate sales taxes at the federal and state levels of government.

The practical difficulties associated with the sub-national administration of a multi-stage sales tax are well illustrated by the Brazilian experience. In Brazil, the federal government levies a manufacturer level sales tax (IPI); states are assigned a broad-based credit-method VAT (ICMS at 17% rate); and municipalities administer a services tax (ISS). Under the ICMS, interstate sales are taxed on the origin principle (at a 12% rate for North-South and a 7% rate for South-North transactions) and international trade is taxed on a destination basis. Thus in domestic trade, relatively less developed northern states are given preferential treatment. In international trade, as most of the imports are destined for the Southern states and a disproportionate amount of exports go through the Northeastern states, most of the revenues are collected by the richer states and export rebates are given by poorer states. Another emerging area of major potential interstate conflict is the use of the ICMS as a tool for state industrial development. Some northeastern states are offering 15-year ICMS tax deferral to industry. In a highly inflationary environment such as Brazil, unless such tax liabilities are indexed, they have the potential to wipe out all ICMS tax liabilities.

Recognizing these difficulties, China is introducing a centrally administered VAT with proceeds to be shared with the provinces. Effective January 1, 1994, the provinces will be given 25% of VAT revenues and the federal government the remainder. India is facing major difficulties in reforming its sales tax system. At the present time, sales taxes are assigned to the state level; excises are administered by the federal government and the proceeds shared with the states; while the octroi is a local tax on intermunicipal trade. Sales taxes are administered on narrow bases; the number of rates vary by state from six in Orissa to seventeen in Bihar and Gujarat. Some states consider the sales tax an important element of redistributive policy. To reform the existing sales tax structure, a broad based national value-added tax has been proposed, but this is strongly opposed by the states. The states are also dissatisfied with the centrally-administered excise tax because it limits their powers of taxation. The federal government prefers to raise additional revenues from

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<sup>6</sup> For a contrary view, see Burgess, Howes and Stern (1993), who have advocated a system of state VATs for India.

administered prices rather than from excises because the proceeds from excises have to be shared with state governments. The octroi tax on intermunicipal trade is a source of significant revenues for local governments and remains popular in spite of its anti-trade bias.

#### iv. *Excise Taxes*

Specific excise taxes are also good candidates for decentralization to the states, perhaps even better than general sales taxes, although they have much less potential for raising revenues. (Obviously, we are not including customs duties and export taxes in this; they should clearly be federal responsibilities.) Specific excises are unlikely to cause significant impediments to the efficiency of the internal economic union or major misallocations of labor and capital if they are levied on a destination basis. They simply become a form of taxes on residents and are unlikely to be significant enough to cause migration. If they were levied on an origin basis, this might not be the case; businesses could avoid the tax by moving elsewhere, unless the product taxed depended upon a local resource. An example of the latter might be taxes on oil and gas, to which we return below when discussing resource taxes.

From an efficiency point of view, there are two problems with excise taxes. For one, as with sales taxes, they will give rise to cross-border shopping problems, possibly on a large scale given that the taxed goods may be cheap to transport. Tax competition is likely to reduce the importance of this, especially if the fiscal capacities of the states are not too different and if equalizing transfers further reduce discrepancies. Another possible problem arises from the fact that excise taxes distort the markets for the goods being taxed. This distortion can be significant if states must rely on excise taxes for a large part of their revenues. Of course, it could be argued that, for some goods, at least some differential tax is justified on the basis of externalities. Alcohol and tobacco taxes are good examples of this, and gasoline taxes might also be so considered.

Excise taxes may have an adverse effect on equity to the extent that they are levied on goods consumed by lower-income persons. However, this need not be a telling problem as long as the federal government has at its disposal other tax instruments for addressing redistributive issues on a broader basis, such as the income-based tax-transfer system. There might, however, be other federal policy objectives which are affected by excise tax policy. For example, the federal government may have a concern with health policy, the effectiveness of which may be influenced by cigarette and alcohol taxes, or with pollution and road use, where gasoline taxes become relevant.

Excises on alcohol and tobacco could be jointly occupied by the federal and provincial levels, as both health care and the prevention of accidents and crimes is usually a shared responsibility in most federations. Games of chance and gambling usually fall within the purview of state and local governments and therefore taxes on betting, gambling, racetracks and lottery revenues would be suitable for assignment to subnational governments only.

Taxation to control environmental externalities such as congestion and pollution could be suitably imposed by the level of government having the responsibility

for curtailment of such externalities. This would suggest that carbon taxes to combat global and national pollution issues should be a federal responsibility. BTU taxes, taxes on motor fuels and congestion tolls could be levied by all levels in their own sphere of authority. Effluent charges to deal with interstate pollution should be a federal responsibility. Intermunicipal pollution would be a state responsibility but the responsibility to deal with intra-municipal pollution should rest with local governments. Parking fees to influence inter-modal choices and thereby regulate local traffic congestion should be a local responsibility.

Relative to other taxes, the administrative problems associated with decentralizing excise taxes are less severe. The difficulties of eliminating taxes on business inputs and on exports that plague general sales taxes do not apply with the same force here. Collection costs may not be excessively high for either the sellers or the government. Enforcement should be no greater a problem than with other taxes, especially if the rates are neither too high nor too varied across the federation.

A large variation in excise tax assignment prevails in developing countries. In some countries, such as Indonesia and Mexico, they are centralized. In others, such as Bangladesh and Argentina, they are decentralized. In a large majority of developing countries, excise taxes are co-occupied by national and subnational governments; this is the case in Malaysia, Nigeria and Thailand.

#### *v. Payroll Taxes*

Payroll taxes are typically used in industrialized countries for financing social insurance schemes, especially those limited to employees. The sorts of programs for which payroll taxes are often earmarked may be those which are decentralized to state governments, in which case they would be obvious sources of state revenues. However, they can be a useful adjunct to general revenue financing as well. In either case, they are ideal candidates for state revenue sources. Payroll taxes are relatively easy to administer since they can be collected with minimal cost through payroll deduction. Their base is ultimately almost equivalent to that of general sales taxes. Provided their rates do not differ significantly across states, they are unlikely to cause significant distortions in the labor market.

As well as causing very little distortion of internal labor markets, payroll taxes have minimal redistributive effects. They are not a necessary component of federal redistributive policy instruments, and any adverse effect they may have on income distribution can be easily offset by other taxes at the federal level.

Payroll taxes are widely used in Latin American countries. There is the potential for greater use of this tax instrument by sub-national governments in developing countries.

#### *vi. Resource Taxes*

The case of taxes on resources is an interesting one since it brings the two economic criteria, efficiency and equity, into direct conflict. On the one hand, since resource endowments are immobile across jurisdictions, state taxes on resources, if designed properly, should not distort the internal economic union. Indeed, taxes on resource rents would in a sense be an ideal tax since they would have no efficiency effects

whatsoever.<sup>7</sup> The administrative costs associated with state resource taxes would not be excessive either. At the same time, resources tend often to be distributed very unevenly across states in a given country. In these circumstances, decentralizing resource taxes to the states would result in significant differences in tax capacities, thus creating fiscal inefficiencies and inequities.

In an ideal world, the decentralization of resource revenues to the states would be accompanied by a set of equalizing federal provincial transfers to alleviate the NFB differences that would otherwise result. However, full equalization of tax capacities is rarely implemented. Thus, one might opt for maintaining federal control of those resources that are more likely to be important and unequally distributed, such as oil and gas, while decentralizing others which are less important, such as mining and perhaps forestry. The decentralization of these resource bases also enables states to engage in resource management and conservation practices within their jurisdictions.

In practice, resource tax bases tend not to coincide with rents and thus resource taxes do have efficiency effects. They often distort capital and employment decisions. States might be tempted to use them as instruments to attract economic activity to their jurisdictions, thereby violating the efficiency of the internal economic union. Thus, what could ideally be a fully efficient source of state revenue could turn out to be a highly distortionary tax type. In these circumstances, the case for decentralized control is weakened.

However, some resource taxes, such as royalties and fees and severance taxes on production and/or output, are designed to cover costs of local service provision and could be assigned to local governments. In addition, sub-national governments could also impose taxes to discourage local environmental degradation. This rationale explains the practice in Canada, Australia and the U.S. of having intermediate level governments (in the case of U.S., local governments as well) impose such taxes on natural resources.

Resource taxes in developing countries are typically a central government responsibility. In a few countries, such as Colombia and the Russian Federation, tax administration is decentralized to subnational governments. Important exceptions to central domination in this area include Malaysia, where resource taxes are a shared responsibility among federal and state governments, and India, where such taxation is solely a state responsibility.

#### vii. *Property Taxes*

Taxes on real property are usually mainstays of local finance, and with good reason. Real property is immobile across jurisdictions so the efficiency costs of using it as a tax base are low. Moreover, it can be argued that many benefits of local public services accrue to property owners, so the tax serves as a sort of benefit tax. Of course, there are costs incurred in administering property taxes, and considerable discretion is involved in arriving at property values for the purposes of taxation. Thus,

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<sup>7</sup> For a general discussion of the way in which resource taxes could be designed to capture rents, see Boadway and Flatters (1993).

there is an argument for having the states play a coordinating role in administering property taxes, though not necessarily in setting local rates.

Just as different states may have different fiscal capacities and can provide different levels of NFBs to their citizens, so municipalities have different fiscal capacities, particularly with respect to real property tax bases. The case for equalizing transfers among municipalities within states is as strong as that for similar transfers across states. Of course, it would be the state which made the transfer rather than the federal government.

In industrial countries, a common practice regarding property development is for local governments to require developers to provide basic infrastructure in a new subdivision — the so-called practice of gold plating or exactions. Such a practice has potential applications in developing countries.

The assignment of property taxes varies across developing countries. In Indonesia, property taxes are a central government responsibility. In Brazil, China and the Phillipines, the responsibility is shared among federal, state and local governments. Property taxation is a state-local responsibility in Argentina, Malaysia and Pakistan. In most other developing countries, such as Bangladesh, Colombia, Mexico, Nigeria, Papua New Guinea and Thailand, it is a solely local responsibility. Thus, significant potential exists for the decentralization of property taxes in developing countries. Colombia has successfully experimented with a tax on urban property value increases (valorization tax) to finance infrastructure investment projects which were responsible for the improvements in property values. The city of Jakarta, Indonesia is experimenting with a betterment levy to finance urban infrastructure improvement projects.

Developing countries also frequently levy agricultural land taxes. Taxes based on land area, the market value of agricultural land, the productivity potential and market access of the land have been used as a source of central government revenues in many developing countries. These taxes are more suitable for assignment to local governments.

#### viii. *Pricing for Public Services*

A potentially important source of funds for publicly-provided services that are private in nature is the pricing of those services by such things as user fees and licenses. These are especially relevant for local and some state public services since these are often private in nature. The case for pricing of public services is clearest where the service in question is not provided publicly for redistributive reasons. Many local services are of this sort, including water, garbage, local utilities and recreational facilities. An advantage of pricing for public services, in addition to its pure revenue-raising role, is that efficient use of the services can be promoted. This can be useful both for rationing available supplies and for determining how many resources to devote to providing the service. That is not to say that pricing is distributionally neutral in these cases; indeed, many of these services are necessities and form an important part of consumption by lower income persons. However, in an economy with a well-developed public sector, distributive objectives are probably better left to higher levels of government rather than being a component of each

public service provided.

On the other hand, some important quasi-private public services are provided by the public sector largely for redistributive reasons, including health and education. Relying heavily on user fees to finance these services would seem to contradict this objective. That does not preclude limited amounts of pricing, for example, to cut down on overuse of medical services.

In any case, these sources of revenues are likely to be more important to lower levels of government, whose services tend to be private in nature. User pricing should not have an adverse effect on resource allocation. Nor is it costly to administer since it is simply an application of the fee-for-service principle. And, as mentioned, any adverse effects on equity can be addressed more effectively by policies of a more general nature applied by higher levels of government.

In summary, this discussion of the assignment of taxes makes it clear that the case for decentralizing taxing powers is not as compelling as that for decentralizing public service delivery. Lower level taxes can introduce inefficiencies in the allocation of resources across the federation and can cause inequities among persons of different jurisdictions. As well, collection and compliance costs can increase significantly. These problems seem to be more severe for some taxes than for others, so the selection of which taxes to decentralize must be done with care. In the end, a balance must be reached between the need to achieve fiscal and political accountability at the lower levels of government and the disadvantages, from a national point of view, of having a fragmented tax system. In virtually all countries, the balance involves a fiscal gap between adjacent levels of government.

The trade-off between increased accountability and increased economic costs from decentralizing taxing responsibilities can be mitigated by the fiscal arrangements that exist between levels of government. We have already mentioned the fact that the system of fiscal transfers can serve to reduce the fiscal inefficiencies and inequities that arise from different fiscal capacities across states. In addition to this, some of the fragmentation that would otherwise occur from decentralizing taxes can be mitigated by joint occupation and harmonization of taxes among different jurisdictions. That will be discussed in the next section.

### **3. Co-occupation of Tax Bases**

Taxes need not be exclusively assigned to one level of government or another, but may be occupied simultaneously by both. Examples exist in which income taxes are levied by both federal and state governments (United States, Canada), general sales taxes are levied by both federal and state governments (Canada), payroll taxes are levied by both federal and state governments (Canada) and excise taxes are levied by both federal and state governments (Canada, United States). Indeed, even municipal governments may share income or sales tax bases (as in the United States).

The co-occupation of tax bases can be done with varying degrees of coordination. At one extreme, there may be no formal coordination in the sense that both levels of government set their own policies independently. Even in this case, tax policies will not be completely unrelated. For any given tax base, there is a limit

to the extent to which it can be exploited for revenue purposes. The amount of tax room available for one level of government will depend upon that occupied by the other. The division of the tax room can affect the degree of harmonization in an otherwise uncoordinated system. For example, the greater the proportion of the tax room occupied by the federal government, the more likely it is that the states will adopt tax structures which are similar to those of the federal government. This may be important for tax bases, like the income tax, that are important instruments for achieving national objectives. Indeed, determining the amounts of tax room of various taxes the federal government should occupy is an important policy decision in a decentralized federation.

Alternative forms of coordination of co-occupied tax bases can exist. At the least there may be an exchange of taxpayer information and other auditing information. There may be agreement on the formulas for the allocation of tax bases among jurisdictions. There may be agreements on the bounds of tax rates for sales and excise taxes. Common bases may be agreed upon, or even common rate structures. A common collection machinery may be adopted. In the limit, there may be highly centralized tax systems with agreed upon tax sharing formulas. The next section considers in more detail the consequences of different degrees of coordination and harmonization.

To summarize this discussion of tax assignment, Tables 1 presents in summary form the main arguments for assignment of the various taxes to the three main levels of government — federal, state and local. A broad view of the extent of decentralization of tax bases in a sample of fifteen developing countries is presented in Table 2.

#### **IV. TAX HARMONIZATION AND COORDINATION**

The harmonization of tax systems in a federation, like the system of intergovernmental transfers, is a means by which the advantages of decentralized fiscal decision making can be accomplished without excessively jeopardizing the efficient and equitable functioning of the national economy. In this section, we discuss first the purpose of tax harmonization from a general perspective and then outline some of the alternative ways in which harmonization can be achieved.

##### **1. The Objectives of Tax Harmonization**

Tax competition among jurisdictions can be beneficial by encouraging cost-effectiveness and fiscal accountability in state governments. It can also by itself lead to a certain amount of tax harmonization. At the same time, decentralized tax policies can cause certain inefficiencies and inequities in a federation as well as lead to excessive administrative costs. Tax harmonization is intended to preserve the best features of tax decentralization while avoiding its disadvantages.

Inefficiencies from decentralized decision making can occur in a variety of ways. For one, states may implement policies which discriminate in favor of their own residents and businesses relative to those of other states. They may also engage

in beggar-thy-neighbor policies intended to attract economic activity from other states. Inefficiency may also occur simply from the fact that distortions will arise from differential tax structures chosen independently by state governments with no strategic objective in mind. Inefficiencies also can occur if state tax systems adopt different conventions for dealing with businesses (and residents) who operate in more than one jurisdiction at the same time. This can lead to double taxation of some forms of income and non-taxation of others.

State tax systems may also introduce inequities into the tax system. Different states may have differing degrees of progressivity in their tax structures, and these may differ considerably from national equity norms of the federal government. To the extent that one views the federal government as being responsible for redistributive equity, this makes their task more difficult. States may also be induced by competitive pressures to implement tax measures which appear to be regressive from a national perspective. For instance, the mobility of either high-income or low-income persons would encourage them to set tax structures which are less progressive than they would otherwise be.

Administrative costs are also likely to be excessive in an uncoordinated tax system. This is especially true if the states and the federal government both occupy a given tax field. Taxpayer compliance is costly because of the need to deal with more than one different tax system. Auditing and collection costs are likely to be higher as well, as taxpayers may be able to engage in tax avoidance by cross-border transactions of a book nature and authorities cannot obtain information from operations in other jurisdictions. In addition, the auditing priorities of state governments may themselves become skewed in favor of generating revenue from non-residents or from residents doing business outside the jurisdiction.

Tax harmonization is intended to eliminate some of these excesses. At the same time, a harmonized tax system can serve as a useful complement to the system of intergovernmental transfers. For one thing, taxes which are harmonized vertically can be used as devices for getting revenues to state governments through tax sharing. For another, if taxes are harmonized across states, equalizing transfers based on tax capacities of states are easier to implement.

The importance of tax harmonization varies by type of tax. Taxes on businesses, such as corporation income taxes, are good candidates for harmonization to the extent that they are used by state governments. They apply to a mobile tax base, and would otherwise pose significant administrative costs if left uncoordinated. Personal income taxes would also benefit from some harmonization. Compliance costs to taxpayers and collection costs to governments could be reduced. Distortionary treatment of capital income could be mitigated. In addition, national equity objectives could be addressed through harmonization measures. The case for harmonizing sales and excise taxes is less compelling. The main inefficiencies here result from cross-border shopping problems, and those are likely to be handled by tax competition among jurisdictions. There could be some administrative savings by having a coordinated system of sales taxes between the federal government and the states to reduce the compliance cost to sellers and to economize on auditing



by the tax authorities. Some form of harmonization would be virtually mandatory should the states attempt to operate a VAT system. In this case, harmonization alone is unlikely to overcome the problems of dealing with cross-border transactions in a federation without border controls. For other tax bases, such as payroll taxes, property taxes and user fees, the advantages of harmonization would seem to be minimal.

## **2. Methods of Tax Harmonization**

Varying degrees of tax harmonization are possible depending on the degree of decentralization in the tax system. The following are listed in decreasing order of centralization, focusing largely on systems of harmonization encompassing both the federal government and the states.

i. At one extreme, a full tax sharing arrangement may exist whereby the federal government determines the tax base and rate structure (perhaps in consultation with the states), and simply agrees to share a certain proportion of it with the states. This is basically analogous to an unconditional grant scheme with the size of the grant dependent upon total tax collections. The sharing formula could be based on the principle of derivation, or on some other formula including a simple one like equal per capita shares. Though this scheme is certainly fully harmonized, the states are purely passive recipients of revenues collected by the federal government, so the advantages of decentralizing tax responsibility are absent. Obviously, a fully uniform tax structure is achieved and national equity and efficiency goals can be pursued at minimal administrative cost. Virtually any type of tax could be shared in this way.

ii. The advantages of a single system can be retained while at the same time allowing the states some responsibility for revenue raised in their jurisdiction. For example, the federal government could determine both the base and rate structure for a particular type of tax and choose the rate level so as to generate the amount of revenue they need from the tax. The states could then piggy back on the federal base and rate structure by setting a state tax rate to apply to federal tax liabilities that would determine how much revenue is owing to the state. The federal government would collect the tax on behalf of the state and pass on each state's share of the revenue to them. There would need to be an allocation formula to determine allocation of the tax base among states. In the case of personal income taxes, it could be based on the residence of taxpayers. For corporate taxes, the allocation formula might be based on some measure of the amount of profits generated in each state. This is difficult to do with precision given that many corporate activities affect profits across the nation (administrative overheads, research and development, advertising, etc.). Furthermore, allocation by profits would provide an incentive for corporations to engage in book transactions in order to take their profits in low-tax states. Allocation formulas actually used tend to be based on such things as the share of payrolls in each state, the share of revenues, the share of capital stock, or some combination of those. Such a system combines a high degree of harmo-

nization of the base, rate structure, and collection machinery with the devolution of some revenue raising responsibility to the states. It is ideally suited to personal and corporate income taxes where harmonization is desired for national equity and efficiency reasons.

However, in some contexts it might have some disadvantages. For example, if the states occupy significant tax room for the harmonized tax, they may feel constrained by an inability to use the base or rate structure for policy purposes. In the case of sales taxes, such a system might constrain the type of tax operated by the federal government. For example, if the federal government wished to operate a VAT, it would be difficult to allow the provinces to piggy back onto it while setting their own VAT level (let alone their exemptions). The process of crediting that is entailed by a VAT would be very cumbersome for intermediate transactions across state borders. An alternative would be to have the states levy single-stage sales taxes with the same final base as the federal VAT and a common collection procedure. The problems with monitoring cross-border transactions would disappear, but some of the advantages of a VAT would be lost (such as purging final sales of taxes levied on inputs at earlier stages).

iii. The degree of harmonization could be reduced by allowing states to do more than simply set a rate to apply to federal tax liabilities. States could be allowed to set their own rate structures, and apply them to the federal base. Part of this would involve setting their own systems of exemptions, deductions and credits. Alternatively, they could be allowed to participate with the federal government in the choice of the base. States could also participate in collection procedures (e.g., auditing); indeed, they may have a great interest in doing so if their taxes include certain items of interest to them but not to the federal government (tax credits, allocations of tax revenue to their jurisdiction, etc.)

iv. State and federal taxes could co-exist side by side in the same area with separate collection machinery, but with some agreement over such things as the base, the rate structure, and formula for allocating revenues among states. This could give a considerable amount of harmonization while at the same time retaining a great deal of decentralized responsibility for tax policy. Even this extent of harmonization might be important in fields like corporate and personal income taxes where national efficiency and equity objectives are at stake. Of course, the administrative advantages of having a single tax collecting authority would be lost.

v. It is not necessary for the federal government to co-occupy a tax base for harmonization to occur. States may occupy bases by themselves and still have some agreement concerning bases, rate structure, allocation formulas and the like. At the least they could have agreements to exchange information on taxpayers so as to improve compliance. Agreements among states to harmonize taxes is analogous to tax treaties among nations.

vi. Finally, harmonization need not require formal agreements among states. Tax

competition could be relied upon to harmonize certain aspects of taxes, such as bases in the case of income taxes or indirect tax rates. As mentioned earlier, the disadvantage of this is that it does not rule out the possibility of beggar-thy-neighbor tax policies being implemented by the states.

## V. IMPLICATIONS FOR TAX REFORM

Much of the above discussion has been from an abstract perspective and has been based on principles of fiscal federalism that have been largely conceived for industrialized countries. Although the principles are basically universal ones, their application to developing countries will need to be constrained by institutional features of those countries. There are some key ways in which the fiscal systems of developing countries differ from those in industrialized countries and this may temper reforms.

First, public sectors in developing countries tend to focus on different policy objectives. In industrialized economies, government spending is comparatively more oriented towards redistributive objectives, using such instruments as transfers, social insurance and provision of basic public services that effectively redistribute in kind. This means that the tax system is relatively less important as an instrument for redistribution. In developing countries, governments are involved more with fostering economic development through participation in industrial projects and the provision of infrastructure and basic public services. The systems of transfers and social insurance are less elaborate or even non-existent. Tax systems differ considerably as well. Developing countries tend to rely much more on indirect taxes, including excises and trade taxes, than do industrialized countries. This hampers their ability to use the tax system for redistribution. The administrative machinery for collecting taxes also tends to be less efficient. Finally, developing countries tend to have fiscal systems that are much more centralized than in developed countries. Even where expenditure responsibilities are decentralized, taxation tends not to be. Much of the funding for state and local services often comes from the federal government, frequently in a way which impedes lower level autonomy and fiscal responsibility.

One might expect that, as these economies develop, their fiscal systems would converge more to those of the industrialized countries. Indeed, there are those who would argue that the convergence itself would enhance development by making public sectors more effective. In particular, the decentralization of the provision of fiscal services to lower levels of government would make governments more efficient and more responsive to the actual needs of the citizens and the economy. To be effective, this decentralization would have to be accompanied by enough decentralization of revenue raising responsibilities to make lower levels of government fiscally autonomous and accountable. It would also need to be accompanied by a system of fiscal arrangements which includes both a set of fiscal transfers designed to maintain the efficiency and equity of the internal economic union and appropriate measures

to coordinate the tax systems among various jurisdictions.<sup>8</sup>

The process of tax reform is high on the agenda of many developing countries. The existence of multiple levels of government with their own revenue raising responsibilities will affect the directions of tax reform that are desirable as well as feasible. In this concluding section, we summarize some of the main ways in which that is so without reference to the case of any particular country. There will naturally be institutional or constitutional constraints which limit the extent to which systems that are ideal from an economic point of view can actually be implemented.

#### *i. Tax Assignment*

To the extent that the assignment of taxes to different levels of government can be chosen, it should be done according to the principles outlined earlier. Efficiency, equity and administrative simplicity are all factors. Efficiency considerations would suggest centralizing taxes applied on more mobile bases. Equity considerations would suggest centralizing taxes which serve a redistributive purpose. Decentralized tax administration is simpler the less important are cross-border transactions for the tax base.

Direct taxes are good candidates for federal assignment, especially corporation taxes, capital taxes, personal income taxes, and taxes on wealth and wealth transfers. Taxes on trade should also be federal. The states could use indirect taxes, both excises (including energy taxes) and general sales taxes. Payroll taxes could be used by the states. Property taxes are ideally suited for local revenues, though the state government may well have a role in assessment and in equalizing municipal revenues. User charges are also a good source of state and local revenue.

Resource taxes are an interesting case. Efficiency considerations would make them suitable for state use since they are immobile. As well, from a resource management point of view, state control might be beneficial. However, in many countries, major resource tax bases, such as oil and gas, are very unevenly distributed so fiscal inefficiencies and inequities can arise from their assignment to state governments. In these circumstances, federal assignment would be desired. Those like forestry and minerals could remain with the states. If some or all resource taxes are assigned to the states, it is important that the federal government implement a system of overarching equalizing transfers as discussed below which includes state resource taxes.

#### *ii. Tax Design*

The design of particular taxes will depend upon the level at which they are controlled. This is most apparent in the case of sales taxes. At the federal level, there are good reasons for using a VAT for general sales taxation. A VAT ensures that traded goods are treated properly and that final sales are purged of all taxes on business inputs. The tax can be levied on a destination base with little difficulty. Compliance problems should be reduced and collection costs minimized for the tax

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<sup>8</sup> A summary of the case for decentralizing fiscal systems in developing countries may be found in Boadway, Roberts and Shah (1994).

authority (although compliance costs for the private sector will be higher). However, for general sales taxes levied by the states, a VAT is much more difficult to administer. There are several reasons for this. First, the system of crediting taxes on inputs becomes complicated on cross-border transactions. Taxes levied on a transaction in one state, in which an intermediate input is sold to a producer in another state, are credited to the tax authority in the latter; the credit should be transferred to the 'exporting' state. If tax systems differ among states, this is complicated to administer, especially given the absence of border controls. The second problem also arises from the absence of border controls. Cross-border shopping by final demanders becomes difficult to preclude so that it is difficult to operate the tax on a full destination basis. From a practical point of view, taxes on cross-border purchases will accrue to the state of origin rather than that of destination. On the administrative side, the cost of operating several state-level VATs would be quite high. As well, auditing priorities within a given state could be skewed in favor of those things which are likely to generate revenue for a state's own treasury.

The design of destination-based excise taxes by state governments will also be constrained by cross-border transactions. These will essentially limit the extent to which neighboring states can choose differential tax rates. Cross-border purchases will typically be taxed at origin rather than destination. Specific excise taxes could, of course, be levied on an origin basis. While this would avoid the cross-border shopping problem, it could induce inefficiency in the internal common market. Any tax differentials would give an incentive for producers to locate in the lower-tax jurisdictions. States would be more inclined to engage in beggar-thy-neighbor tax competition.

The choice of income tax structures could also be influenced by decentralization to the states. Again, tax competition would affect the degree of progressivity of the personal income tax system and the structure of incentives for the corporate tax system. Tax administration would also be more complicated, especially as regards the treatment of income earned outside the jurisdiction. In the absence of tax treaties and administrative cooperation, it would be very difficult practically to ensure compliance. Moreover, with independent decision making, it would be difficult to ensure that income earned outside a given jurisdiction was taxed once and only once within the federation.

The design of some other forms of taxation are much less constrained by decentralization. Payroll taxation avoids most of the above problems since cross-border transactions are a relatively small part of payrolls; most workers reside where they work. Similarly, resource taxes, property taxes and user charges are relatively unaffected by decentralization. The only effect of decentralization is to induce some fiscal accountability through tax competition, and that may be beneficial rather than disadvantageous on balance.

### iii. *The Tax Mix*

All countries obtain their tax revenues from a variety of sources, even though the ultimate bases of some taxes are quite similar. In the absence of federalism considerations, the balance among tax sources depends upon a variety of factors. Relying

on a mix of taxes ensures that rates for each component tax are lower than they otherwise would be. That makes tax administration less costly by reducing the incentive to evade and avoid taxes. It also broadens the net of taxpayers since those who can avoid one type of tax may end up paying another. The cost of having a mix of taxes is that one duplicates administrative costs. As well, some of the other goals of government, such as equity, may be compromised by not being able fully to pursue redistributive policies through a given type of tax.

The decentralization of some tax bases may further constrain the public sector in its choice of tax mix and its ability to achieve its overall goals. For example, if significant tax responsibility is decentralized to the states, the ability of the federal government to choose the optimal mix from the point of view of the entire federation may be compromised, especially if the decentralization is concentrated on one tax type.

#### *iv. Tax Harmonization and Coordination*

Tax harmonization and coordination are important objectives of tax policy. They contribute to the efficiency of the internal common market, reduce collection and compliance costs and help to achieve national standards of equity. Tax harmonization may be horizontal (among states) as well as vertical (between the federal government and the states). In the case of tax bases jointly occupied by the federal government and the states, harmonization can be achieved without sacrificing state fiscal responsibility by having a single centralized collection procedure combined with the ability of the states to decide on their own tax rates. Such vertical harmonization can be of varying degrees. The states may simply be required to abide by the federal base, but be allowed to impose their own rate structures. Or they may be required to abide by the federal rate structure and only be allowed to choose their own rate levels and possible schedules of credits. Fiscal responsibility would require that they at least be able to set their own rate levels. A formula must exist for allocating tax bases among states for those who are taxpayers in more than one state.

It is rather more difficult to harmonize indirect taxes than to harmonize direct taxes. On the other hand, harmonization of indirect taxes is not nearly as pressing a need since the efficiency costs of decentralized indirect tax systems is not likely to be high and equity objectives are not likely to be threatened. Since state sales taxes should be single-staged, it will not be possible to operate a joint federal-state VAT system. The best that can be done is to adopt a common base for the state sales tax as for the federal VAT and jointly administer them. If the states alone operate general sales taxes, their bases could be harmonized by agreement.

Tax sharing schemes in which the revenues from a federally-administered tax source are shared in a given way with the states of origin may be used to address fiscal gaps at the state level. These have the advantage that the tax system remains highly harmonized. However, they have the significant disadvantage that no fiscal responsibility is assumed by the states. It is generally preferable for the states to be allowed to set their own rates within an otherwise harmonized system. If revenue sharing is used, it is preferable that it not be done on a tax-by-tax basis.

Table 1: Conceptual Basis of Tax Assignment

Tax Type	Determination of Base	Rate	Collection & Admin.	Comments
Customs	F	F	F	Int'l trade taxes
Corporate income	F	F	F	Mobile factor
Resource taxes				
Rent (profit) tax	F	F	F	unequally distributed
Royalties/fees; severance taxes;				
production taxes	S,L	S,L	S,L	benefit taxes
Conservation chgs	S,L	S,L	S,L	environment preserv.
Personal income	F	F,S,L	F	Redistrib., mobility, stabilization
Wealth taxes (capital, wealth transfers, F inheritances)	F	F,S	F	Redistributive
Payroll	F,S	F,S	F,S	social programs
Value-added tax	F	F	F	admin. costs, stabiliz.
Single-stage sales				
Option A	S	S,L	S,L	Higher compliance costs
Option B	F	S	F	Harmonized
"Sin" taxes				
alcohol, tobacco	F,S	F,S	F,S	Health care shared resp.
gambling, betting	S,L	S,L	S,L	State and local resp.
lotteries	S,L	S,L	S,L	State and local resp.
race tracks	S,L	S,L	S,L	State and local resp.
Taxation of "Bads"				
Carbon	F	F	F	global/national pollut.
BTU taxes	F,S,L	F,S,L	F,S,L	by extent of pollution
Motor fuels	F,S,L	F,S,L	F,S,L	tolls on road use
Effluent charges	F,S,L	F,S,L	F,S,L	by extent of pollution
Congestion tolls	F,S,L	F,S,L	F,S,L	tolls on road use
Parking fees	L	L	L	local congestion
Motor vehicles				
Registration,	S	S	S	state revenue source
Driver's licenses	S	S	S	state revenue source
Business taxes	S	S	S	benefit tax
Excises	S	S	S	immobile base
Property	S	L	L	benefit tax, immobile
Land	S	L	L	benefit tax, immobile
Frontage/betterment	S,L	L	L	cost recovery
Poll tax	S,L	S,L	S,L	non-distorting
User charges	F,S,L	F,S,L	F,S,L	payment for services

Table 2. Tax Assignment in Selected Developing Countries

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*Number of Countries with Subnational Determination of:*

<i>Type of Tax</i>	<i>Base</i>	<i>Rate</i>	<i>Tax Collection &amp; Administration</i>
<hr/>			
Customs	1	1	2
Income & Gifts	1	1	6
Estates	4	4	4
Corporate	1	1	4
Resource	3	3	6
Sales	4	5	7
VAT	1	1	4
Excises	8	8	12
Property	11	12	14
Fees	10	10	12
Residual Powers	2	2	2

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*Note:* Sample Countries (15): Argentina, Bangladesh, Brazil, China, Colombia, India, Indonesia, Malaysia, Mexico, Nigeria, Pakistan, Papua New Guinea, Philippines, Russian Federation, Thailand.



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